rather than an *arrangement)* but I am anxious to avoid stating unnecessarily what will occur to others at the moment.

II. *Ordinary Electricity*

20. By ordinary electricity I understand that which can be obtained from the common machine, or from the atmosphere, or by pressure, or cleavage of crystals, or by a multitude of other operations; its distinctive character being that of great intensity, and the exertion of attractive and repulsive powers, not merely at sensible but at considerable distances.

21. *Tension.* — The attractions and repulsions at sensible distances, caused by ordinary electricity, are well known to be so powerful in certain cases, as to surpass, almost infinitely, the similar phenomena produced by electricity, otherwise excited. But still those attractions and repulsions are exactly of the same nature as those already referred to under the head *Tension, Voltaic electricity* (4); and the difference in degree between them is not greater than often occurs between cases of ordinary electricity only. I think it will be unnecessary to enter minutely into the proofs of the identity of this character in the two instances. They are abundant; are generally admitted as good; and lie upon the surface of the subject: and whenever in other parts of the comparison I am about to draw, a similar case occurs, I shall content myself with a mere announcement of the similarity, enlarging only upon those parts where the great question of distinction or identity still exists.

22. The discharge of common electricity through heated air is a well-known fact. The parallel case of voltaic electricity has already been described (8, etc.).

23. *In motion:* i. *Evolution of heat.*—The heating power of common electricity, when passed through wires or other substances, is perfectly well known. The accordance between it and voltaic electricity is in this respect complete. Mr. Harris has constructed and described[1] a very beautiful and sensible instrument on this principle, in which the heat produced in a wire by the discharge of a small portion of common electricity

is readily shown, and to which I shall have occasion to refer
for experimental proof in a future part of this paper (So).

24. ii. *Magnetism.*—Voltaic electricity has most extraordinary

[1] *Philosophical Transactions,* 1827, p. 18. *Edinburgh Transactions,* 1821.
Harris on a New Electrometer, etc., etc